DRAFT OPEN HOUSE LAYOUT AND POSTERS

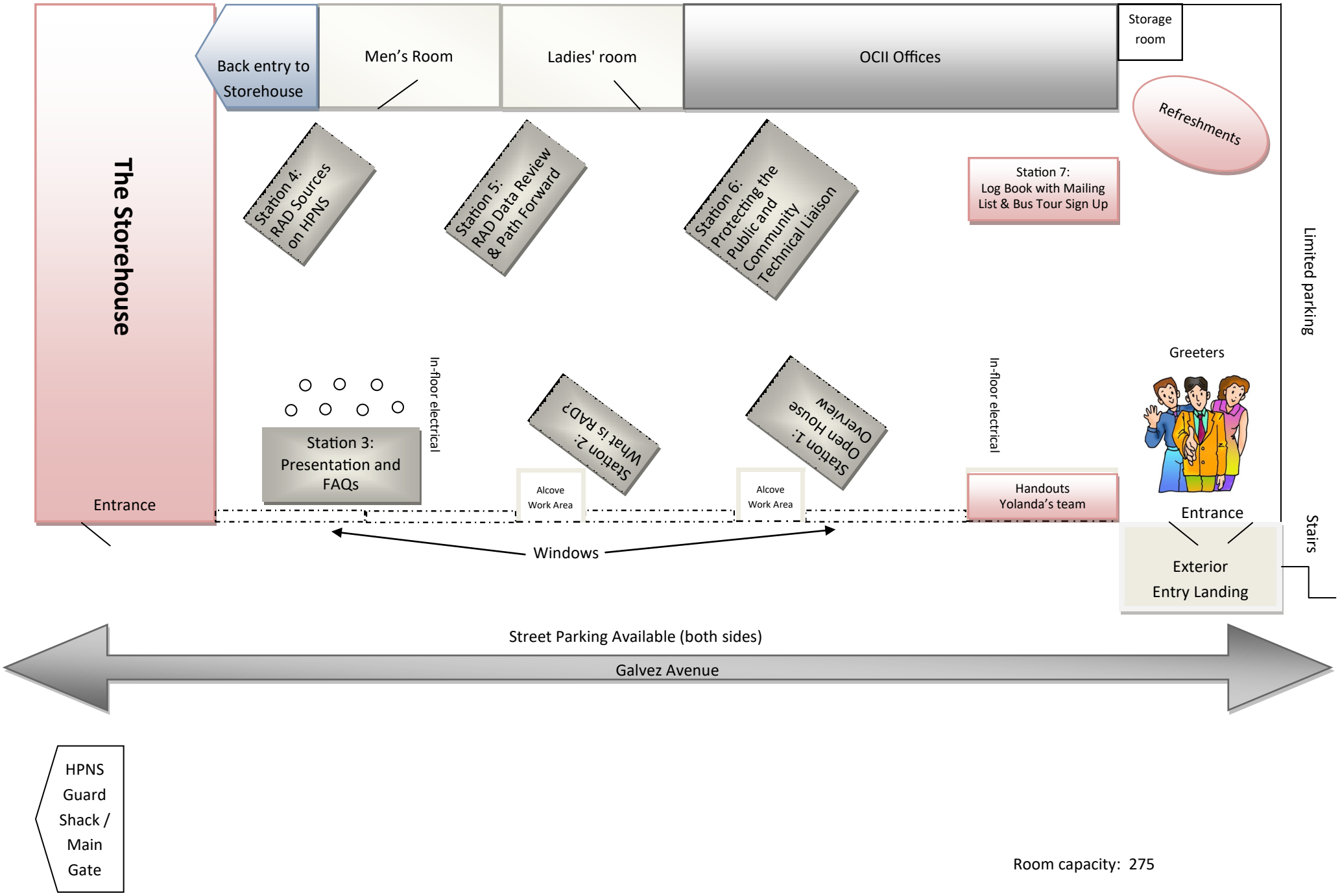
February 8, 2017

HPNS Community Meeting

LAYOUT AND POSTER STATIONS

- **Greeters**
  - Derek/Dr. Covello/Lily/Tamsen (Roamers)
  - Chinese and Spanish Translators
- **Handouts**
  - Yolanda
- **Station 1:** Poster 1 – Open House Overview
  - Danielle/Asha/Amy
- **Station 2:** Poster 2 – What is RAD
  - Matt/Tina
- **Station 3:** Presentation and FAQs (multiple laptops)
  - Pat/Jamie
- **Station 4:** Poster 3: RAD Sources on HPNS
  - Zach/David
- **Station 5:** Poster 4: RAD Data Review and Path Forward
  - Scott/Nina
- **Station 6:** Poster 5: Protecting the Public and Community Technical Liaison
  - Dr. Kathryn Higley
- **Station 7:** Log Book with Mailing List and Bus Tour Sign-ups
  - Bill/Liz/Jackie
- **Refreshments**

Approximate Layout of OCII Conference Room
The Storehouse, 451 Galvez Avenue, San Francisco, CA 94124



Room capacity: 275

Department of the Navy
Base Realignment and Closure (BRAC)

HPNS Hunters Point Naval Shipyard

Open House Overview

Welcome to the Navy's Open House to share information on radiological cleanup at Hunters Point Naval Shipyard (HPNS).

Subject matter experts are available at each poster station to answer your questions regarding the Navy's radiological cleanup activities at HPNS.

Aerial View of Hunters Point Naval Shipyard

TONIGHT'S GOALS

- To hear your concerns and comments, and answer your questions
- To present information on radiation and answer your questions about radiological cleanup activities at HPNS
- To present information on why radiological data sampling is currently under investigation at HPNS
- To explain how the Navy is reviewing radiological soil samples and describe the plan for additional sampling and cleanup
- To discuss the best ways to communicate investigation results with community members
- To explain how the Navy ensures public safety during the radiological cleanup process

HPNS

Hunters Point Naval Shipyard

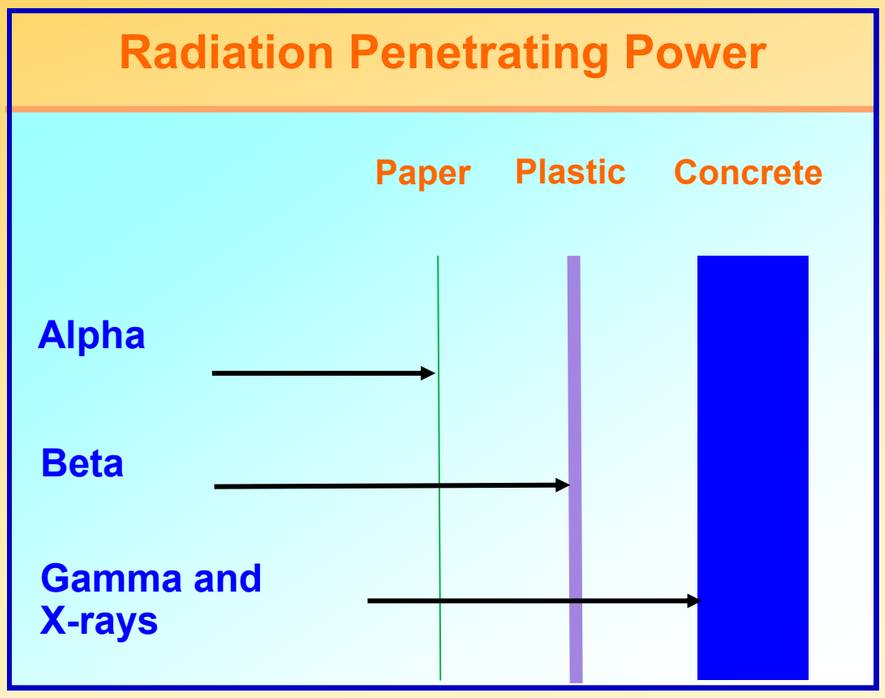
Department of the Navy
Base Realignment and Closure (BRAC)

Understanding Radiation

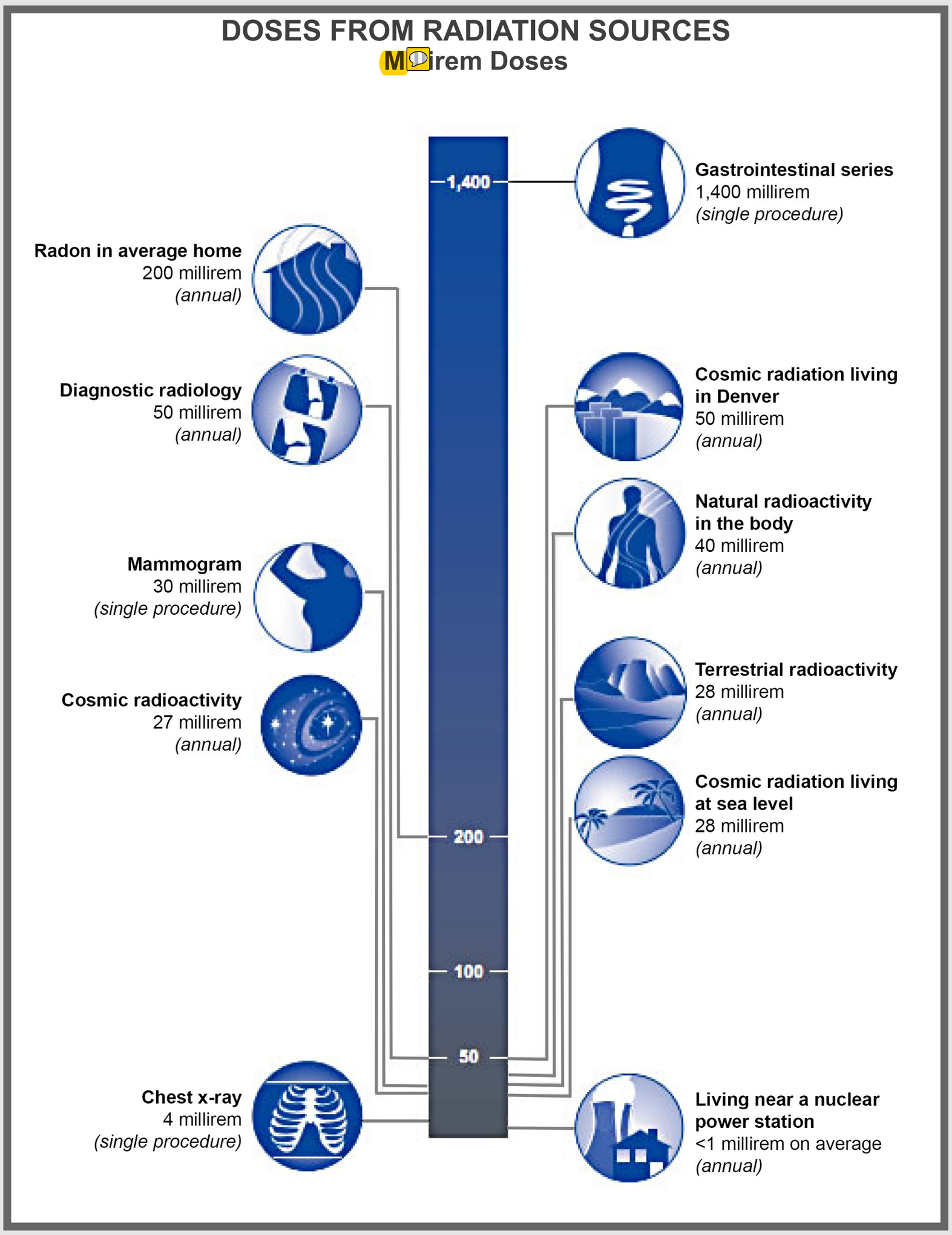
What is radiation?

- Radiation is energy given off by atoms
- You cannot see, smell, or taste radiation
- Everyone is exposed to radiation every day from natural and man-made sources (like medical X-rays or smoke detectors)
- There are three types of radiation

⇒Alpha ⇒Beta ⇒Gamma



How are we exposed to radiation?



Radiation is naturally present all around us.

The Earth contains radioactive materials naturally occurring in soils (uranium and thorium), rock formations (radon gas), and potassium.

The foods we eat contain radioactive materials. Potassium is present in bananas, sea salt, red meat, and beer. Brazil nuts contain potassium, thorium and uranium.

Radiation is also present in some of the man-made sources listed below: cigarettes, ceramics and granite materials, medical procedures, and microwave ovens.

HPNS Radiation Sources and Locations

Hunters Point Naval Shipyard
Department of the Navy
Base Realignment and Closure (BRAC)

Hunters Point Naval Shipyard (HPNS) provided critical ship maintenance to the Pacific Fleet during both World War I and World War II. Services included ship repair, maintenance, decontamination, and disposal of radioactive equipment, which included items like radioluminescent (glow-in-the-dark) deck markers, dials or paint, and gauges.

The Naval Radiological Defense Laboratory (NRDL) conducted research at HPNS on the effects of radiation from 1948 to 1969. The NRDL's mission was to study the potential hazards of radiation and develop the means of preventing or minimizing its harmful effects.

Historical Sources of Radiation

- Radium was used to cause items to glow in the dark and accounts for 99% of the radiological contamination found at HPNS
- Strontium and Cesium were used at HPNS in the decontamination of ships that participated in OPERATION CROSSROADS weapons tests and during research performed by the NRDL
- Strontium and radium were used in radioluminescent deck markers that glow in the dark

Concrete, soil, and sediment at HPNS have been tested for radiation

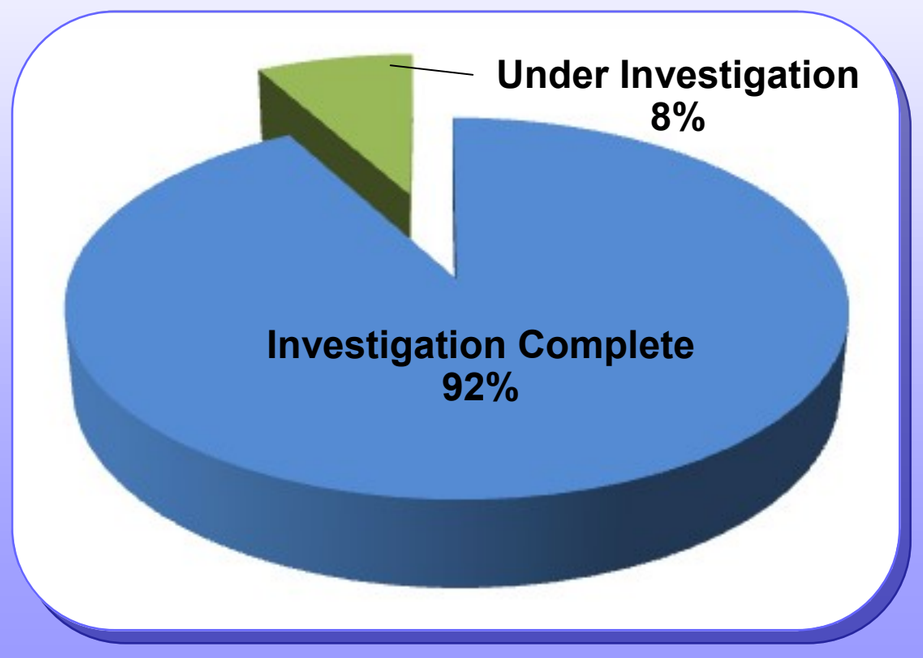
Sanitary sewer and storm drain pipelines and trenches have been investigated for radiation

Buildings have been scanned for radiation

A **Historical Radiological Assessment (HRA)** was issued in 2004 and provides a thorough evaluation of historical radiological operations and activities at HPNS. The HRA identified 91 sites/areas with potential radiological contamination.

Some of the largest areas identified as being impacted with radiological materials include:

- Buildings associated with the NRDL activities or buildings associated with radium paint application
- Sanitary sewer and storm drain lines
- Former disposal or burial areas
- Piers or ship berths used after OPERATION CROSSROADS



HPNS
Hunters Point Naval
Department of the Navy
Base Realignment and Closure (BRAC)

Radiological Data Review

Background on Radiological Data Review at HPNS

As a part of its regular review of contractor data, in 2012 the Navy discovered that one of it's radiological soil sampling contractors, Tetra Tech EC, had falsified radiological soil samples. Tetra Tech EC claimed that the soil samples had been taken after cleanup at HPNS, when they were in fact from an area known not to have been affected by Navy activities.

The Navy took action and notified the Nuclear Regulatory Commission (NRC) and the California Department of Public Health (CDPH), and an internal investigation began, including collection of new soil sample data from areas in question and subsequent corrective actions were implemented. The NRC, CDPH, the US Environmental Protection Agency (US EPA), and the California Department of Toxic Substances Control (DTSC) reviewed the Navy's investigation and corrective action measures.

Navy Action

Comprehensive Sample Review

- ♦ More than 70,000 sample results reviewed
- ♦ More than 130 building and land areas resampled with on-site independent supervision
- ♦ Additional soil excavations completed to clean up areas where falsified samples were taken
- ♦ New radiological surveys were performed with on-site independent supervision

2-Phase Radiological Data Analysis

Phase I: Gather Existing Data and Identify Potential Areas of Concern

√ Develop database of available soil data

√ Identify unexpected results which might indicate potentially false data through statistical analysis

√ Confirm sources of "good" data

√ Locate gaps in data for Phase II evaluation

Phase II: Determine Priority Areas for New Field Sampling and Conduct Sampling

√ Analyze unusual data identified in Phase I

√ Identify additional data needs for new sampling

√ Design sampling plan and conduct sampling

√ Analyze new data and compare to results existing data analyses

Additional Claims

After initial investigations by the Navy and the NRC (pre-2016), former workers at HPNS made claims about Tetra Tech EC activities. The Navy is conducting a thorough investigation into all of the radiological data issues, as well as any additional claims made regarding Tetra Tech EC's radiological samples. All of the results will be made available to the public when the investigation is complete.

Activities for Sources of Evidence

Soil samples in question will be researched to ensure the integrity of each sample taken

New soil samples will be taken with on-site independent supervision

Additional cleanup, including additional soil removal, will occur to ensure areas are free of radiological contamination

Buildings will be scanned for potential radiological contamination with on-site independent supervision

Health Check™

Public safety is the highest priority to the Navy. To date, there has been no evidence that radiation levels have exceeded levels considered safe; thus there is no reason to believe that there tenants, workers, visitors on Navy property, or residents on adjacent property have any health risks.

HPNS
Hunters Point Naval
Department of the Navy
Base Realignment and Closure (BRAC)

Protecting the Public

The Navy has several on-site controls and procedures in place at Hunters Point Naval Shipyard (HPNS) to ensure public safety.

Establishing Radiologically Controlled Areas

Public access to all work areas is restricted and only specially trained personnel are permitted to access radiological controlled work areas

Utilization of a Portal Monitor to Screen Trucks for Radiation

Trucks entering and leaving HPNS must pass through a portal monitor which screens for radiation

Conducting Air Monitoring

The Navy monitors for both particulates and radiological contamination with on-site air monitors

Implementation of Dust Control Measures

Dust is controlled to contain contamination within the restricted areas

Comprehensive Evaluation

The Navy follows a carefully designed plan at HPNS that ensures effective cleanup in a time-sensitive manner with public safety as a priority.

The California Department of Public Health collects its own confirmation samples from radiological cleanup sites for independent verification.

Multiple agencies participate in the radiological investigations and remediation at HPNS.

United States Navy
Naval Facilities
Engineering Command
Base Realignment
and Closure (BRAC)

United States Navy Radiological Affairs Support Office (RASO)

United States Environmental Protection Agency (USEPA)

United States Nuclear Regulatory Commission (USNRC)

California Department of Public Health (CDPH)

California Department of Toxic Substances Control (DTSC)